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Benzoyl- o -aminocinnamic acid (ANDO)
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1918, 35, 291

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1916, 27, 458

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Preparation (LEVENE and ALLEN)

1916, 27, 441

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Preparation (LEVENE and ALLEN)

1916, 27, 440

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1920, 41, 307

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1916, 27, 461

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 α -Methyl- γ , γ -diethoxyacetic acid:

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6-Methylheptylic acid:

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1916, 27, 452

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Preparation (LEVENE and ALLEN)

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Preparation (LEVENE and ALLEN)

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Preparation (LEVENE and ALLEN)

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5-Methylhexylic acid:

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Oxidation with hydrogen peroxide (LEVENE and ALLEN)

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1916, 27, 441

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Preparation (LEVENE and ALLEN)

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5-Methylhexyl iodide:

Preparation (LEVENE and ALLEN)

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7-Methyloctylic acid:

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7-Methyloctylic amide:

Preparation (LEVENE and ALLEN)

1916, 27, 447

7-Methyloctyl iodide:

Preparation (LEVENE and ALLEN)

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7-Methyloctylmalonic acid:

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7-Methyloctyl phenylurethane:

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1916, 27, 450

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4-Methylpentylmalonic acid:

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4-Methylpentyl phenylurethane:

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- Nucleotide linkage in (JONES and READ)
1917, 29, 123
- Nucleotides from (LE-
VENE)
1920, 41, 483
- Preparation (BAUMANN)
1918, 33, xiv
- Structure (JONES and READ)
1917, 29, 111
- (LEVENE)
1917, 31, 591;
1918, 33, 229;
1920, 43, 379
- Uracil-cytosine dinucleotide (JONES and READ)
1917, 31, 39
- Yucca filamentosa:**
- Saponin from (CHERNOFF, VIEHOEVER, and JOHNS)
1916–1917, 28, 437

Z

Zein:

Arachin and, in metabolism (SURE)

1920, **43**, 443

Corn, effect on nutritive value of (HOGAN)

1916, **27**, 199

Nutrition, value for (OSBORNE and MENDEL)

1918, **35**, 22

(HART, NELSON, and PITZ)

1918, **36**, 291

Peas, supplement to, in nutrition (McCOLLUM, SIMMONDS, and PARSONS)

1919, **37**, 288

Proteins of velvet bean and, in growth (SURE)

1922, **50**, 103

Supplementing factors (SURE)

1921, **46**, 443

Supplement to wheat, corn, or oats for growth (McCOLLUM, SIMMONDS, and PITZ)

1916-1917, **28**, 485

Zinc:

Absorption from gastrointestinal canal (SALANT, RIEGER, and TREUTHARDT)

1918, **34**, 467

Brain, human, content (BODANSKY)

1921, **48**, 361

Zinc—continued:

Distribution in and elimination from body (SALANT, RIEGER, and TREUTHARDT)

1918, **34**, 463

Food products, content of (BIRCKNER)

1919, **38**, 191

Foods, determination in (BIRCKNER)

1919, **38**, 191

Marine organisms, occurrence in (BODANSKY)

1920, **44**, 399

Oysters, content of (HILTNER and WICHMANN)

1919, **38**, 205

—, distribution in (BODANSKY)

1920, **44**, 404

Zinc acetate:

Glycosuria, production of (SALANT and WISE)

1918, **34**, 450

Zinc malate:

Glycosuria, production of (SALANT and WISE)

1918, **34**, 450

Zinc salts:

Glycosuria, production of (SALANT and WISE)

1918, **34**, 447

Zinc urate:

Preparation (CÜRTMAN and HART)

1921, **46**, 602

FORMULA INDEX

The following index of *new* compounds of known empirical formula is arranged according to Richter's system.

The elements are given in the order C, H, O, N, Cl, Br, I, F, S and P, and the remainder alphabetically.

The compounds are arranged in groups according to the number of carbon atoms (thus C₁ group, C₂ group, etc.); according to the number of other elements besides carbon contained in the molecule (thus C₅ IV indicates that the molecule contains five carbon atoms and four other elements); according to the nature of the elements present in the molecule (given in the above order); and according to the number of atoms of each single element (except carbon) present in the molecule.

Salts are placed with the compounds from which they are derived. The chlorides, bromides, iodides and cyanides of quaternary ammonium bases, however, are registered as group substances.

C₃ Group

C₃ II

C₃H₉N Trimethylamine: hydroiodide mercuric iodide salt
(WOODWARD and ALSBERG) 1921, 46, 6

C₄ Group

C₄ III

C₄H₇O₃N₃ α-Methylguanidoglyoxylic acid (BAUMANN and
INGVALDSEN) 1918, 35, 278

C₄H₇O₅N Anti-hydroxyaspartic acid, acid barium, acid calcium,
barium, calcium, copper, lead, silver and zinc salts
(DAKIN) 1921, 48, 288

Para-hydroxyaspartic acid, acid barium, acid calcium,
barium, calcium, copper, lead, mercury, silver, and
zinc salts (DAKIN) 1921, 48, 283

C₅ Group**C₅ III**

C₅H₄O₃N₄	Uric acid, copper, nickel, potassium and zinc salts (CURTMAN and HART)	1921, 46 , 600
C₅H₁₀O₃N₂	α -Ureidobutyric acid (WEST)	1918, 34 , 192
	Ureidodimethylacetic acid (WEST)	1918, 34 , 192

C₆ Group**C₆ II**

C₆H₁₀O₅	Epichitose (LEVENE)	1919, 39 , 76
C₆H₁₂O₇	<i>d</i> -Allonic acid, brucine salt (LEVENE and MEYER)	1916, 26 , 362
	<i>d</i> -Altronic acid, brucine salt (LEVENE and MEYER)	1916, 26 , 363
	Chitaric acid, brucine salt (LEVENE and MEYER)	1916, 26 , 364
	Chitonic acid, brucine and calcium salts (LEVENE and MEYER)	1916, 26 , 364
	<i>d</i> -Galactonic acid, brucine salt (LEVENE and MEYER)	1916, 26 , 361
	<i>d</i> -Gluconic acid, brucine salt (LEVENE and MEYER)	1916, 26 , 358
	<i>d</i> -Gulonic acid, brucine salt (LEVENE and MEYER)	1916, 26 , 359
	<i>d</i> -Idonic acid, brucine salt (LEVENE and MEYER)	1916, 26 , 360
	<i>d</i> -Mannonic acid, brucine salt (LEVENE and MEYER)	1916, 26 , 359
	<i>d</i> -Talonic acid, brucine salt (LEVENE and MEYER)	1916, 26 , 362
C₆H₁₃I	4-Methylpentyl iodide (LEVENE and ALLEN)	1916, 27 , 451
C₆H₁₅N	Triethylamine, hydroiodide mercuric iodide (WOODWARD and ALSBERG)	1921, 46 , 5

C₆ III

C₆H₆O₃N₂	2, 6-Dioxy-5-methylpyrimidine-4-aldehyde (thymine-4-aldehyde) (JOHNSON and CRETCHER)	1916, 26 , 112
C₆H₇O₃N₃	2, 6-Dioxy-5-methylpyrimidine-4-aldehyde oxime (JOHNSON and CRETCHER)	1916, 26 , 112
C₆H₈O₃N₂	Proline hydantoin (DAKIN)	1920, 44 , 527

$C_6H_8O_3N_2$	γ -Hydroxyproline hydantoin (DAKIN)	1920, 44, 518
$C_6H_9O_2N_2$	Deaminocarnosine (BAUMANN and INGVALDSEN)	1918, 35, 269
$C_6H_{12}O_{16}P_4$	Phosphoric inosite ester (ANDERSON)	1920, 43, 126
$C_6H_{13}O_5N$	Dextro- <i>d</i> -ribohexosaminic acid (LEVENE and CLARK)	1921, 46, 28
	Epichitosamine, hydrochloride, osazone (LEVENE)	1919, 39, 69
	Levo- <i>d</i> -ribohexosaminic acid (LEVENE and CLARK)	1921, 46, 26
	Lyxohexosamine, hydrochloride (LEVENE)	1916, 26, 161
$C_6H_{13}O_6N$	Epichitosaminic acid (LEVENE)	1918, 36, 79
	<i>d</i> -Levoxylhexosaminic acid (LEVENE)	1918, 36, 86
$C_6H_{18}O_{24}P_6$	Inosite hexaphosphoric acid, barium and silver salt (ANDERSON)	1920, 44, 436

C₆IV

$C_6H_6O_2N_2S$	2-Thio-5-methyl-6-oxypyrimidine-4-aldehyde (2-thio-thymine aldehyde) (JOHNSON and CRETCHER)	1916, 26, 109
$C_6H_7O_2N_3S$	2-Thio-5-methyl-6-oxypyrimidine-4-aldehyde oxime (JOHNSON and CRETCHER)	1916, 26, 109
$C_6H_{10}O_3NI$	β -Iodopropionylalanine (BAUMANN and INGVALDSEN)	1918, 35, 270
$C_6H_{12}O_5NCl$	Dextro- <i>d</i> -ribohexosaminic acid lactone hydrochloride (LEVENE and CLARK)	1921, 46, 29
	Dextro- <i>d</i> -xylohexosaminic acid lactone hydrochloride (LEVENE)	1918, 36, 85
	Epichitosaminic acid lactone hydrochloride (LEVENE)	1918, 36, 77
	Levo- <i>d</i> -ribohexosaminic acid lactone hydrochloride (LEVENE and CLARK)	1921, 46, 27

C₇ GroupC₇ II

$C_7H_{12}O_6$	Anhydrosedoheptose (LA FORGE and HUDSON)	1917, 30, 73
$C_7H_{14}O_2$	5-Methylhexylic acid (LEVENE and ALLEN)	1916, 27, 442
$C_7H_{14}O_7$	α - <i>d</i> -Guloheptose (LA FORGE)	1920, 41, 253
	<i>d</i> -Mannoketoheptose (LA FORGE)	1916-1917, 28, 518

$C_7H_{15}I$	5-Methylhexyl iodide (LEVENE and ALLEN)	1916, 27, 446
$C_7H_{16}O$	5-Methylhexyl alcohol (LEVENE and ALLEN)	1916, 27, 443
$C_7H_{16}O_7$	α -Guloheptitol (LA FORGE)	1920, 41, 255
	β -Guloheptitol (LA FORGE)	1920, 41, 256
	α -Sedoheptitol (LA FORGE and HUDSON)	1917, 30, 68

C₇ III

$C_7H_{15}ON$	5-Methylhexylic amide (LEVENE and ALLEN)	1916, 27, 442
$C_7H_{15}O_7N$	Chondrosaminoheptonic acid, copper salt (LEVENE)	1916, 26, 152
$C_7H_{15}O_9P$	α -Methylglucosidophosphoric acid (LEVENE and MEYER)	1921, 48, 235

C₈ Group**C₈ II**

$C_8H_{16}O_2$	6-Methylheptylic acid (LEVENE and ALLEN)	1916, 27, 452
$C_8H_{17}O$	6-Methylheptyl alcohol (LEVENE and ALLEN)	1916, 27, 452

C₈ III

$C_8H_{17}ON$	6-Methylheptylic amide (LEVENE and ALLEN)	1916, 27, 452
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C₈ IV

$C_8H_{10}O_2N_2S$	2-Ethylmercapto-5-methyl-6-oxypyrimidine-4-aldehyde (JOHNSON and CRETCHER)	1916, 26, 111
$C_8H_{11}O_2N_3S$	2-Ethylmercapto-5-methyl-6-oxypyrimidine-4-aldehyde oxime (JOHNSON and CRETCHER)	1916, 26, 111

C₈ V

$C_8H_7O_{10}N_2AsHg$	3, 5-Dinitro-4-hydroxyphenylarsinic acid mercuric acetate (RAIZISS, KOLMER, and GAVRON)	1919, 40, 537
$C_8H_8O_8NAsHg$	3-Nitro-4-hydroxyphenylarsinic acid mercuric acetate (RAIZISS, KOLMER, and GAVRON)	1919, 40, 536
$C_8H_9O_7N_2AsHg$	3-Nitroarsanilic acid mercuric acetate (RAIZISS, KOLMER, and GAVRON)	1919, 40, 535

- $C_8H_{10}O_6NAsHg$ 3-Amino-4-hydroxyphenylarsinic acid mercuric acetate (RAIZISS, KOLMER, and GAVRON) 1919, 40, 537
- $C_8H_{11}O_6N_2AsHg$ 3, 5-Diamino-4-hydroxyphenylarsinic acid mercuric acetate (RAIZISS, KOLMER, and GAVRON) 1919, 40, 538

 C_8 VI

- $C_8H_9O_5NBrAsHg$ 3-Bromoarsanilic acid mercuric acetate (RAIZISS, KOLMER, and GAVRON) 1919, 40, 541

 C_9 Group C_9 II

- $C_9H_{16}O_4$ 4-Methylpentylmalonic acid (LEVENE and ALLEN) 1916, 27, 451
- $C_9H_{18}O_2$ Ethyl 5-methylhexylate (LEVENE and ALLEN) 1916, 27, 442
- 7-Methyloctylic acid (LEVENE and ALLEN) 1916, 27, 447
- $C_9H_{19}O_6$ 3,5,6-Trimethylglucose (LEVENE and MEYER) 1921, 48, 244
- $C_9H_{19}I$ 7-Methyloctyl iodide (LEVENE and ALLEN) 1916, 27, 448
- $C_9H_{20}O$ 7-Methyloctyl alcohol (LEVENE and ALLEN) 1916, 27, 448

 C_9 III

- $C_9H_{18}O_9P$ 1,2-Monoacetonephosphoric acid glucoside (LEVENE and MEYER) 1921, 48, 238
- $C_9H_{19}ON$ 7-Methyloctylic amide (LEVENE and ALLEN) 1916, 27, 447

 C_9 IV

- $C_9H_9O_7AsHg$ 4-Carboxyphenylarsinic acid mercuric acetate (*p*-Benzarsinic acid mercuric acetate) (RAIZISS, KOLMER, and GAVRON) 1919, 40, 539
- $C_9H_{14}O_8N_3P$ Cytidinephosphoric acid, brucine and barium salts (LEVENE) 1919, 39, 77
- $C_9H_{14}O_9N_2P$ Urindinphosphoric acid, ammonium, barium, brucine and lead salts (LEVENE) 1918, 33, 233; 1919, 40, 395; 1920, 41, 1

C₁₀ Group**C₁₀ I**

- C₁₀H₂₂** 2-Butylhexane (LEVENE and CRETCHER) 1918, 33, 510

C₁₀ II

- C₁₀H₁₆O** Oil isolated from urine (ANDERSON) 1916, 26, 395, 401, 409
- C₁₀H₁₈O₄** 5-Methylhexylmalonic acid (LEVENE and ALLEN) 1916, 27, 446
- C₁₀H₂₀O₂** 2-Butylhexylic acid (LEVENE and CRETCHER) 1918, 33, 508
- Ethyl 6-methylheptylate (LEVENE and ALLEN) 1916, 27, 452
- 8-Methylnonylic acid (LEVENE and ALLEN) 1916, 27, 454
- C₁₀H₂₁O₆** 3,5,6-Trimethyl methylglucoside (LEVENE and MEYER) 1921, 48, 244
- C₁₀H₂₁I** 2-Butylhexyl iodide (LEVENE and CRETCHER) 1918, 33, 509
- C₁₀H₂₂O** 2-Butylhexyl alcohol (LEVENE and CRETCHER) 1918, 33, 509

C₁₀ III

- C₁₀H₁₀O₂N₂** *d*- α -Phenylmethylhydantoin (WEST) 1918, 34, 190
- C₁₀H₁₂O₃N₂** *d*- α -Phenylureidopropionic acid (WEST) 1918, 34, 189
- C₁₀H₁₄O₃N₂** Hydroxypropylproline anhydride (DAKIN) 1920, 44, 524
- C₁₀H₁₄O₈N₅** Guanylic acid, brucine salt (LEVENE) 1919, 40, 171
- C₁₀H₂₁O₉P** 3,5,6-Trimethyl-2-phosphoric acid methyl glucoside
(LEVENE and MEYER) 1921, 48, 245

C₁₀ IV

- C₁₀H₁₆O₃N₂S** 2-Thio-4-diethoxymethyl-5-methyl-6-oxypyrimidine (JOHNSON and CRETCHER) 1916, 26, 108
- C₁₀H₁₇O₁₂N₃P₂** Hexocytidindiphosphoric acid, barium and brucine salts (LEVENE) 1921, 48, 123

C₁₀ VI

- C₁₀H₉O₈NBrAsHg** 3-Bromooxalylarsanilic acid mercuric acetate
(RAIZISS, KOLMER, and GAVRON) 1919, 40, 541

C₁₁ Group**C₁₁ II**

- C₁₁H₂₀O₄** Dibutylmalonic acid (LEVENE and CRETCHER)
1918, 33, 507
- C₁₁H₂₀O₅** Ethyl α -methyl- γ,γ -diethoxyacetoacetate (JOHNSON
and CRETCHER) 1916, 26, 107
6-Methylheptylmalonic acid (LEVENE and ALLEN)
1916, 27, 453
- C₁₁H₂₂O₂** Ethyl 7-methyloctylate (LEVENE and ALLEN)
1916, 27, 447

C₁₁ III

- C₁₁H₁₀O₅N₂** Antiphenylhydantoinhydroxyacetic acid (DAKIN)
1921, 48, 287
Paraphenylhydantoinhydroxyacetic acid (DAKIN)
1921, 48, 284
- C₁₁H₁₉ON₃** Oil from urine, semicarbazone (ANDERSON)
1916, 26, 393, 401

C₁₁ IV

- C₁₁H₁₀O₃NI₃** Thyroxin, ammonium, barium, calcium, copper,
magnesium, nickel, potassium and zinc salts, hydro-
chloride and sulfate (KENDALL and OSTERBERG)
1919, 40, 314
- C₁₁H₁₈O₁₃N₂P₂** Hexothymidindiphosphoric acid, barium and bru-
cine salts (LEVENE) 1921, 48, 123

C₁₂ Group**C₁₂ II**

- C₁₂H₂₂O₄** 7-Methyloctylmalonic acid (LEVENE and ALLEN)
1916, 27, 449
- C₁₂H₂₂O₆** 3,5,6-Trimethyl-1,2-acetoneglucose (LEVENE and
MEYER) 1921, 48, 243
- C₁₂H₂₄O₂** 4-Butyloctylic acid (LEVENE and CRETCHER)
1918, 33, 511
Ethyl 2-butyloctylate (LEVENE and CRETCHER)
1918, 33, 508
- C₁₂H₂₅I** 4-Butyloctyl iodide (LEVENE and CRETCHER)
1918, 33, 511
- C₁₂H₂₆O** 4-Butyloctyl alcohol (LEVENE and CRETCHER)
1918, 33, 511

C₁₂ III

- C₁₂H₁₁O₂N₃** 2,6-Dioxy-5-methylpyrimidine-4-aldehyde anil (JOHNSON and CRETCHER) 1916, **26**, 113
- C₁₂H₁₄O₄N₂** Hippuryl-β-alanine (BAUMANN and INGVALDSEN) 1918, **35**, 276
- C₁₂H₁₇O₂N** 3-Methylbutyl phenylurethane (LEVENE and ALLEN) 1916, **27**, 440
- C₁₂H₂₁O₉P** 1,2,3,5-Diacetone-6-phosphoric acid glucoside (LEVENE and MEYER) 1921, **48**, 237

C₁₂ IV

- C₁₂H₁₁ON₃S** 2-Thio-5-methyl-6-oxypyrimidine-4-aldehyde anil (JOHNSON and CRETCHER) 1916, **26**, 110
- C₁₂H₁₁O₃N₂I₃** Thyroxin ureide (KENDALL and OSTERBERG) 1919, **40**, 327
- C₁₂H₂₁O₃N₂S** 2-Ethylmercapto-4-diethoxymethyl-5-methyl-6-oxypyrimidine (JOHNSON and CRETCHER) 1916, **26**, 110

C₁₂ V

- C₁₂H₁₅O₈N₂AsHg** Diacetyl-3,5-diamino-4-hydroxyphenylarsinic acid mercuric acetate (RAIZISS, KOLMER, and GAVRON) 1919, **40**, 540

C₁₃ Group**C₁₃ II**

- C₁₃H₂₄O₄** 2-Butylhexylmalonic acid (LEVENE and CRETCHER) 1918, **33**, 510
- Ethyl 4-methylpentylmalonate (LEVENE and ALLEN) 1916, **27**, 451

C₁₃ III

- C₁₃H₁₆O₅N₂** Sedoheptose osone *o*-phenylenediamine compound (LA FORGE and HUDSON) 1917, **30**, 67
- C₁₃H₁₉O₂N** 4-Methylpentyl phenylurethane (LEVENE and ALLEN) 1916, **27**, 451

C₁₃ IV

- C₁₃H₁₂O₄NI₃** Thyroxin acetate, sulfate, ammonium, barium, calcium, potassium, sodium, and silver salts (KENDALL and OSTERBERG) 1919, **40**, 323
- C₁₃H₁₆O₅NCl** Benzal *d*-l-xylohexosaminic acid lactone hydrochloride (LEVENE) 1918, **36**, 86

$C_{13}H_{19}O_6N_2Br$	<i>d</i> -Mannoaldoheptose (LA FORGE)	<i>p</i> -bromophenylhydrazone 1916-1917, 28 , 522
	<i>d</i> -Mannoketoheptose (LA FORGE)	<i>p</i> -bromophenylhydrazone 1916-1917, 28 , 518

C₁₄ Group**C₁₄ II**

$C_{14}H_{26}O_4$	Ethyl 5-methylhexylmalonate (LEVENE and ALLEN)	1916, 27 , 446
$C_{14}H_{28}O_2$	Ethyl 4-butyloctylate (LEVENE and CRETCHER)	1918, 33 , 511

C₁₄ III

$C_{14}H_{12}O_2N_2$	<i>d</i> - α -Naphthylmethylhydantoin (WEST)	1918, 34 , 191
	<i>dl</i> - α -Naphthylmethylhydantoin (WEST)	1918, 34 , 190
$C_{14}H_{14}O_3N_2$	<i>d</i> - α -Naphthylureidopropionic acid (WEST)	1918, 34 , 191
$C_{14}H_{21}O_2N$	<i>n</i> -Heptyl phenylurethane (LEVENE and TAYLOR)	1918, 35 , 283
	5-Methylhexyl phenylurethane (LEVENE and ALLEN)	1916, 27 , 446

C₁₅ Group**C₁₅ II**

$C_{15}H_{28}O_4$	Diethyl dibutylmalonate (LEVENE and CRETCHER)	1918, 33 , 507
	Ethyl 6-methylheptylmalonate (LEVENE and ALLEN)	1916, 27 , 453

C₁₅ III

$C_{15}H_{23}O_2N$	6-Methylheptyl phenylurethane (LEVENE and ALLEN)	1916, 27 , 453
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C₁₆ Group**C₁₆ II**

$C_{16}H_{30}O_4$	Ethyl 7-methyloctylmalonate (LEVENE and ALLEN)	1916, 27 , 448
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C₁₆ III

$C_{16}H_{14}O_3N_2$	Phenylaminomalic acid anil (DAKIN)	1921, 48 , 290
$C_{16}H_{22}O_{10}P$	1,2-Monoacetone-6-benzoyl phosphoric acid glucoside (LEVENE and MEYER)	1921, 48 , 239
$C_{16}H_{25}O_2N$	7-Methyloctyl phenylurethane (LEVENE and ALLEN)	1916, 27 , 448

C₁₆ IV

C₁₆H₁₅O₄N₃S α -Naphthalenesulfonylhistidine (BAUMANN and INGVALDSEN) 1918, 35, 275

C₁₇ Group**C₁₇ II**

C₁₇H₃₂O₄ Diethyl 2-butyloxyhexylmalonate (LEVENE and CRETCHER) 1918, 33, 510

C₁₈ Group**C₁₈ III**

C₁₈H₁₇O₄N Cinnamoyltyrosine (ANDO) 1919, 38, 9

C₁₈H₂₀O₈N₂ Benzeneazophenol glucuronate (SALANT and BENGIS) 1916, 27, 408

C₁₈H₂₀O₉N₂ Benzeneazoresorcinol glucuronate (SALANT and BENGIS) 1916, 27, 407

C₁₈H₂₄O₄N₄ Xylohexosamine osazone (LEVENE) 1916, 26, 160

C₁₉ Group**C₁₉ III**

C₁₉H₂₄O₅N₄ Sedoheptose phenylosazone (LA FORGE and HUDSON) 1917, 30, 65

C₁₉H₂₄O₆N₂ *d*-Mannoketoheptose phenylosazone (LA FORGE) 1916-1917, 28, 520

C₁₉ IV

C₁₉H₂₂O₅N₄Br₂ Sedoheptose *p*-bromophenyl osazone (LA FORGE and HUDSON) 1917, 30, 66

C₂₀ Group**C₂₀ III**

C₂₀H₂₁O₄N Cinnamoyltyrosine ester (ANDO) 1919, 38, 8

C₂₁ Group**C₂₁ II**

C₂₁H₂₀O₆ Dibenzalanhydrosedoheptose (LA FORGE and HUDSON) 1917, 30, 72

C₂₁ III

C₂₁H₂₂N₄O₈ *p*-Nitrophenacornithinic acid (SHERWIN and HELFAND) 1919, 40, 25

C₂₂ Group**C₂₂ III**

C₂₂H₂₁O₃N₃ Phenylaminomalic acid dianilide (DAKIN)
1921, 48, 290

C₂₂ IV

C₂₂H₂₆O₆NCI Dibenzaldextro-*d*-ribohexosaminic ethyl ester hydrochloride (LEVENE and CLARK)
1921, 46, 30

C₂₆ Group**C₂₆ IV**

C₂₆H₂₅O₈N₃S₂ α -Naphthalenesulfonylhistidine naphthalenesulfonate (BAUMANN and INGVALDSEN)
1918, 35, 274

C₂₈ Group**C₂₈ II**

C₂₈H₂₈O₇ Tribenzal- α -sedoheptitol (LA FORGE and HUDSON)
1917, 30, 69
Tribenzal- β -sedoheptitol (LA FORGE and HUDSON)
1917, 30, 70

C₃₀ Group**C₃₀ II**

C₃₀H₄₈O₂ Mycosterol and digotinin compound (IKEGUCHI)
1919, 40, 177
C₃₀H₄₈O₃ Hydroxymycosterol (IKEGUCHI)
1919, 40, 180

C₃₂ Group**C₃₂ II**

C₃₂H₅₀O₃ Mycosterol acetate (IKEGUCHI)
1919, 40, 179

C₃₆ Group**C₃₆ II**

C₃₆H₅₄O₆ Hydroxymycosterol acetate (IKEGUCHI)
1919, 40, 181

C₃₆ III

C₃₆H₃₃O₁₀N Pentabenzoylxylohexosamine (LEVENE)
1916, 26, 159

C₅₇ Group

C₅₇ III

C₅₇H₁₀₁O₁₃N Acetylcerasin (LEVENE and WEST) 1917, 31, 64

C₆₀ Group

C₆₀ III

C₆₀H₁₀₅O₁₅N Acetylphrenosin (LEVENE and WEST) 1917, 31, 642

C₆₉ Group

C₆₉ III

C₆₉H₁₀₂O₂₈N₄ *p*-Nitrobenzoylphrenosin (LEVENE and WEST) 1917, 31, 647

C₆₉H₁₀₅O₁₂N Benzoylphrenosin (LEVENE and WEST) 1917, 31, 644

C₇₅ Group

C₇₅ III

C₇₅H₁₁₁O₁₂N Cinnamoylphrenosin (LEVENE and WEST) 1917, 31, 646

SUGGESTIONS FOR THE PREPARATION OF MANUSCRIPTS.

COPY.

All manuscripts should be copied with triple spacing and $1\frac{1}{4}$ inch margins.

The original typewritten copy should be submitted for publication, not a carbon copy. It should be sent flat, not rolled or folded. All corrections on the manuscript should be clearly written in ink. Manuscripts should be consistent in style; a word should not be abbreviated in one line and written out a few lines below.

TITLE.

The title, author's name, and laboratory where the work was done should appear as the heading of the paper, followed by the words: Received for publication, —, —. The title, etc., should be written on a separate sheet.

An abbreviated form of the title, not exceeding thirty-six letters in length, to be used as a running headline, should be given, also on a separate sheet.

HEADINGS.

Major headings, such as INTRODUCTION, EXPERIMENTAL, DISCUSSION, SUMMARY, CONCLUSION, BIBLIOGRAPHY, also TABLE in table headings, are printed in small capitals, and therefore should be underlined twice.

Minor headings, whether center or side, and descriptive matter in table headings, are printed in italics, and therefore underlined once in the manuscript. Capitalize the nouns, adjectives, pronouns, verbs, Cc., Gm., Per Cent, etc.

Dates are not underlined, except when they occur in an italicized heading.

The form Sept. 15, 1915, is preferred to IX-15-15

TEXT.

Begin every experiment, table, or quotation of over five lines on a new sheet. When the text is resumed start with another fresh sheet. This method brings the material of the entire manuscript (except foot-notes, etc.) in sequence, but permits, without mutilation of the manuscript, the separation in the Printer's office of tables, etc., which are set up separately.

Number the sheets consecutively throughout. Mark in ink the place for each illustration.

TABLES.

The form for table headings has already been given under "HEADINGS." Table column headings are written in small letters and followed by periods (see Table I).

Words like *gm.*, *cc.*, *per cent*, *°C.*, etc., referring to an entire column in a table, are written in small letters at the top of the column, and underlined once.

In tables use ditto marks for words when possible, but not for figures.

TABLE I.

Changes in the Blood of Rabbit 1 after Hemorrhage.

Date.	Amount of blood re- moved.	Hemo- globin.	Red blood corpuscles.	Remarks.
<i>1915</i>	<i>cc.</i>	<i>per cent</i>		
Sept. 13	10	89	5,160,000	Weight 1,605 gm.
" 14	10	68	2,870,000	No nucleated red cells.
" 15	10	75	3,990,000	" " " "
" 16	10	58	3,070,000	" " " "

FOOT-NOTES.

Foot-Notes to Text.—Typewrite all foot-notes together at the end of the paper and number them consecutively from 1 up, to correspond with the reference numbers in the text.

Number all foot-note references consecutively throughout the paper; *i.e.*, if the foot-note references on the first page are 1, 2, 3, those on the second page should be 4, 5, 6, etc. Superior numerals (located as ¹, ², ³) should be used in the text to indicate foot-notes.

Double spacing should be used in typewriting foot-notes.

Foot-Notes to Tables.—For foot-notes to tables the following symbols are used (*, †, ‡, etc.), not numbered, in order to distinguish them from foot-notes to text.

REFERENCES.

References are usually printed in the form of foot-notes, and as such are numbered and located with the other foot-notes. If a given article is referred to more than once, the foot-note is printed only with the first reference. The number of the foot-note is repeated at subsequent points in the text where the same article is referred to. Do not use *loc. cit.*

If the author prefers, the references may be printed in a bibliography at the end of the paper. In this case one of two systems is usually adopted: (a) The references in the bibliography are arranged and numbered in the order of their appearance in the text and independently of the foot-notes. (b) They are arranged alphabetically according to the names of the authors. In this case the text reference is the name of the author followed by the year of the publication referred to. If more than one article by the same author in a given year is referred to, the letters *a*, *b*, *c*, etc., may be used to differentiate them. This system is convenient because, among other reasons, of the ease with which new references can be inserted in the manuscript, and of the readiness with which a given reference can be located in the printed bibliography.

Text references to a bibliography are indicated by numbers in parentheses instead of the superior numbers used for foot-notes. Thus "Ehrlich¹" indicates a foot-note; but "Ehrlich (1)" or "Ehrlich (1910, *a*)" or "(Ehrlich, 1910, *a*)" indicates a reference in the bibliography. Two separate series of numbers can thus be used in the same text to indicate respectively foot-notes and references in the bibliography.

The form for references is indicated by the following example,

the order of data being: author, initials, journal (underlined), year, volume (small Roman numerals), and page:

³ Fisher, E., *Ber. chem. Ges.*, 1889, xxii, 87.

The abbreviations used by the *Journal* for the most commonly cited publications are listed below.

<i>Am. Chem. J.</i>	<i>Ergebn. allg. Path. u. path. Anat.</i>
<i>Am. J. Physiol.</i>	<i>Gazz. chim. ital.</i>
<i>Ann. chim. phys.</i>	<i>J. Agric. Research.</i>
<i>Ann. Chem.</i>	<i>J. Am. Chem. Soc.</i>
<i>Arch. ges. Physiol.</i>	<i>J. Am. Med. Assn.</i>
<i>Arch. exp. Path. u. Pharmacol.</i>	<i>J. Biol. Chem.</i>
<i>Arch. Int. Med.</i>	<i>J. Chem. Soc.</i>
[Arkansas] <i>Agric. Exp. Station,</i>	<i>J. Exp. Med.</i>
<i>Bull.</i> [5, 1915].	<i>J. prakt. Chem.</i>
<i>Ber. chem. Ges.</i>	<i>J. Ind. and Eng. Chem.</i>
<i>Berl. klin. Woch.</i>	<i>J. Physiol.</i>
<i>Biochem. J.</i>	<i>J. Russ. Phys. Chem. Soc.</i>
<i>Biochem. Z.</i>	<i>Monatsh. Chem.</i>
<i>Bull. Hyg. Lab., U. S. P. H.</i>	<i>Proc. Roy. Soc. London, Series [B].</i>
<i>Bull. Soc. chim.</i>	<i>Proc. Soc. Exp. Biol. and Med.</i>
<i>Carnegie Inst. Washington, Pub.</i>	<i>Rec. trav. chim. Pays-Bas.</i>
<i>No.</i> [156, 1911].	<i>U. S. Dept. of [Agric.], Bureau of</i>
<i>Chem. Abstr.</i>	<i>[Plant Industry], Bull.</i> [31, 1914].
<i>Chem. Zentr.</i>	<i>Z. physik. Chem.</i>
<i>Compt. rend. Acad.</i>	<i>Z. physiol. Chem.</i>

In order to distinguish books from periodicals, titles of books are not underlined. The place of publication, the year, and the page should be given, and the edition when there is more than one.

References to books and journals should not be inserted in the text.

EXPLANATION OF FIGURES.

Typewrite explanations of the figures, whether for plates or text-figures, and number them to correspond with the figures to which they refer. The Bibliography precedes the Explanation of Figures.

FORMS AND ABBREVIATIONS.

Gram = gm.	10 millimolecular = 10.0 mm
Cubic centimeter = cc.	per cent (without a period).
Centimeter = cm.	a.m., p.m. (lower case).
Millimeter = mm.	In both large and small type
Milligram = mg.	write 30 cc., 20 mg., 20 gm.
Kilogram = kilo or kg.	Always write 0.25; <i>i.e.</i> , with a
Tenth normal = 0.1 N	zero before the decimal point.
Tenth molecular = 0.1 M	

Use the form 193–194.5°, placing the degree mark at the end only.

Use $[\alpha]_D^{20}$ for specific rotation (for 20° and sodium light). The values for $[\alpha]$ are best expressed in the following way:

$$[\alpha]_D^{25} = \frac{-0.25^\circ \times 2.1662}{1 \times 0.1505} = -3.58^\circ$$

For normal and molecular solutions the expressions 2.5 N and 0.5 M are preferred to $2\frac{1}{2}$ N and $\frac{M}{2}$. In exceptional cases, however, as 3/16 M, the fractional form is more convenient.

Hydrated salts should be written as CuSO4.5H2O.

Small numbers in the text are usually written out, large numbers expressed in numerals; thus seven, but 250.

In numbers of four figures or over use commas; as 1,000, 10,000.

SPELLING.

Words like hemorrhage, anesthetic, etc., are spelled with *e* (not *ae*).

Use *f* instead of *ph* for sulfur and sulfur derivatives.

Words serving as special names of definite objects, such as, Experiment 8, Table I, Rabbit 1, are written with capital letters.

NOMENCLATURE.

The usage of the American Chemical Society is followed. The following rules cover most of the terms used in this *Journal*.

Hydroxyl derivatives of hydrocarbons are to be given names

ending in *-ol*; as *glycerol*, *cholesterol*, *pinacol* (not *pinacone*). This applies also to alcohols of the sugar series; as *mannitol*, *heptitol*, etc.

Compounds which are not alcohols but have received names ending in *-ol* should be spelled *-ole*; as *anisole*, *indole*. (German hydrocarbon names, as *Benzol*, *Toluol*, etc., are to be written *benezene*, *toluene*, etc.)

Hydroxy- and not oxy- should be used in designating a hydroxyl compound; as *hydroxyacetic acid*, $\text{CH}_2(\text{OH})\text{CO}_2\text{H}$, (not *oxyacetic acid*).

As regards the endings *-in* and *-ine*, the latter should always be used for *basic* substances, and for them only; *-in* is used for glycerides, glucosides, bitter principles, proteins, etc.; thus *aniline*, *tyrosine*, *purine*, *morphine*; but *gelatin*, *palmitin*, *amygdalin*, *albumin*, *protein* (not *proteid*).

When a substituent is one of the groups NH_2 , NHR , NR_2 , NH , or NR , its name should end in *-ino*; thus $\text{NH}_2\text{CH}_2\text{CH}_2\text{CO}_2\text{H}$, β -*aminopropionic acid* (not *amidopropionic acid*); $\text{C}_6\text{H}_5\text{NHCH}_2\text{CH}_2\text{CO}_2\text{H}$, β -*anilinopropionic acid*; $\text{CH}_3\text{CH}_2\text{NH}_2\text{CO}_2\text{H}$, α -*aminopropionic acid*.

The term ether must not be used for compounds which are properly called esters. Esters and metallic salts should be designated in the form, diethyl phthalate, methyl hydrogen succinate, sodium propionate, etc. (not as the diethyl ester of phthalic acid, the monomethyl ester of succinic acid, or the sodium salt of propionic acid).

Acid radicals, such as $\text{C}_6\text{H}_5\text{CO}$, must have names ending in *-yl*, and their compounds with halogens, as $\text{C}_6\text{H}_5\text{COCl}$, are to be termed chlorides, bromides, etc. Thus, *benzoyl chloride* (not chloride of benzoic acid or benzoic acid chloride).

The connective *o* is to be used in such combining forms as *amino-*, *bromo-*, *chloro-*, *ciano-*, and *iodo-*; thus *bromobenzene*, *chloroacetic*, *nitroaniline*. A few exceptions to this rule are permitted on account of long established usage; as *acetamide*, *cyanamide*.

Substances containing the group SO_3H should, if possible, be called sulfonic acids; failing this, sulfo compounds; thus *phenylsulfonic acid*, $\text{C}_6\text{H}_5\text{SO}_3\text{H}$, and *sulfobenzoic acid*, $\text{HO}_2\text{CC}_6\text{H}_4\text{SO}_3\text{H}$.

Salts of organic bases with hydrochloric acid should be called hydrochlorides (not hydrochlorates or chlorhydrates).

Salts of chloroplatinic acid are called chloroplatinates (not platinichlorides), and the formulas should be written in the form $(\text{CH}_3\text{NH}_2)_2\text{H}_2\text{PtCl}_6$. Salts of thiocyanic acid, HCNS , should be called thiocyanates. Use sodium thiosulfate for $\text{Na}_2\text{S}_2\text{O}_3$.

The word hydroxide should be used for a compound with OH , and hydrate for a compound with H_2O ; thus, chlorine hydrate, $\text{Cl}_2 \cdot 10\text{H}_2\text{O}$; barium hydroxide, $\text{Ba}(\text{OH})_2$.

Greek letters should be indicated by Gk. on the margin of the manuscript.

The following letters are italicized and should be underlined: *o*-, *m*-, *p*-, *d*-, and *l*-, for ortho, meta, para, dextro, and levo.

Use *dl*- (not *r*-) for racemic.

CHARTS.

Ink.—Charts should be drawn with black ink.¹ Blue-black ink and typewriting do not make good reproductions.

Paper.—Charts should be drawn on paper with a smooth surface. The cross-barred paper on page 437 is satisfactory for this purpose, as the blue lines do not reproduce. When it is desired to reproduce the finer lines, the blue lines may be inked in or the green-lined coordinate paper similar to the sample on page 11 may be used. The green lines reproduce and appear as black lines.

Reduction.—Charts should be drawn large enough to stand a reduction of one-half or one-third. The amount of reduction must be taken into consideration when the chart is drawn, and the lines must be heavy enough, and the letters large enough to make clear reproductions when reduced. Letters and numbers should, when reduced, be not less than 2 mm. in height. The outside measurements for charts when reduced, including the legend, are $4 \times 6\frac{1}{2}$ inches. Authors must determine whether the chart is to be printed the long or the short way on the page.

Margin.—A margin of at least half an inch should be left around the chart.

The sample charts show the original size of the chart and the chart reduced to fit the page of the *Journal*.

¹ Higgins' waterproof India ink.

DRAWINGS.

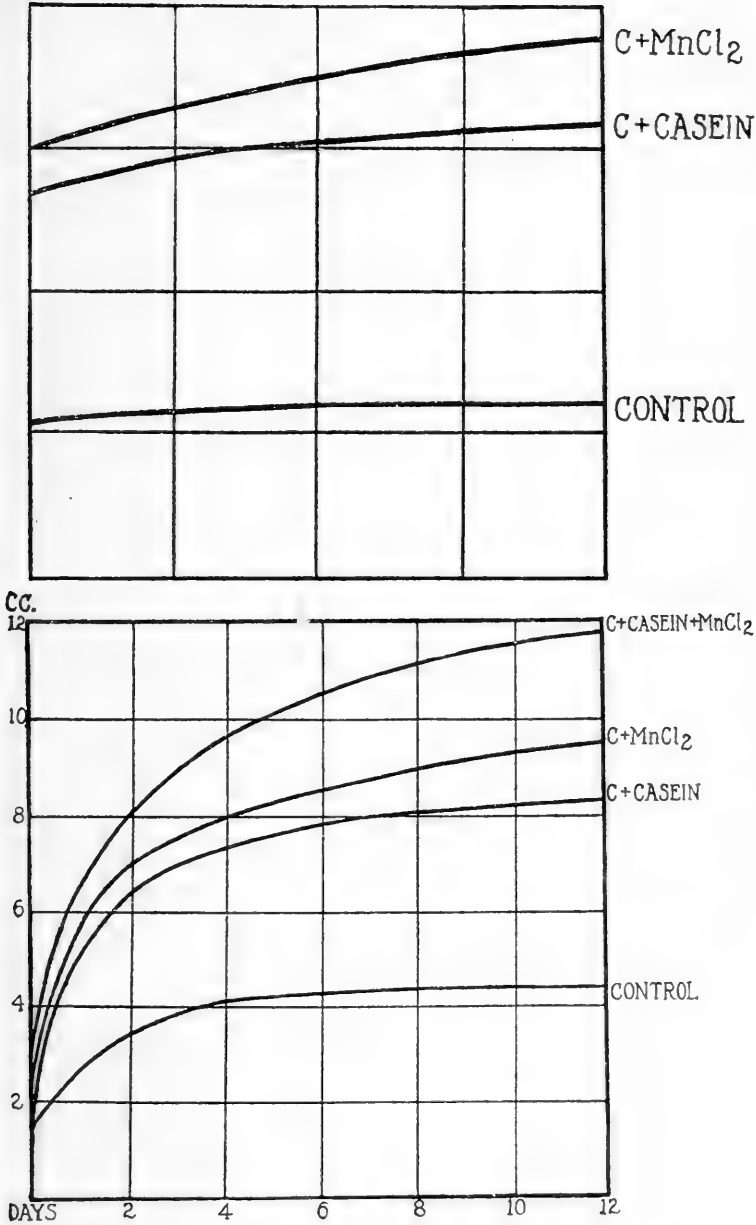
The above remarks concerning ink, paper, reduction, and margin apply also to drawings.

PHOTOGRAPHS.

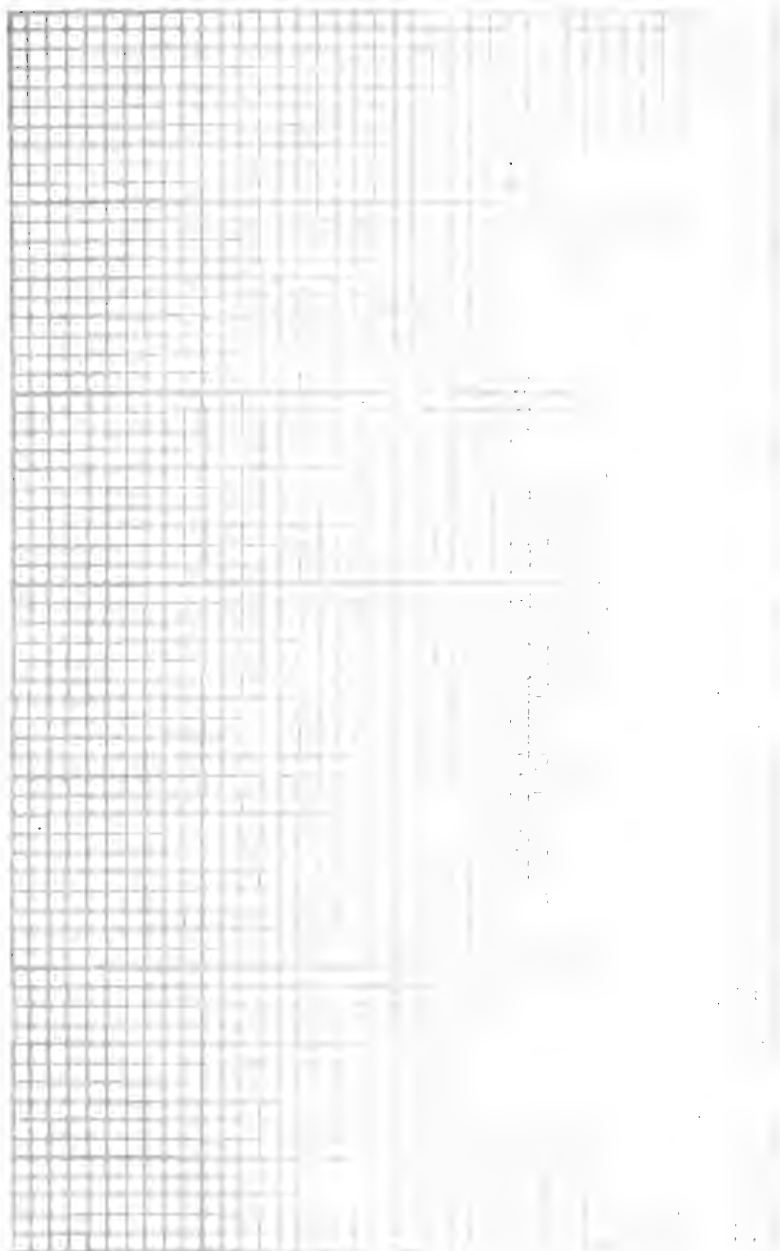
Photographs should be carefully trimmed and mounted. If two or more are to appear on the same page they should be mounted together, and the size to which they are to be reduced must be considered.

Authors who have not the facilities for preparing photographs as described above should send them untrimmed and unmounted. The part to be reproduced should be marked either on the front or the back of the photograph, without scarring the surface. The top should always be indicated if there is a possibility of doubt as to which way the figure should be placed.

Figures should be numbered consecutively, in the order in which they are referred to in the text.



The lower chart shows the effect of reducing the upper chart to two-thirds of the original scale. The letters below are 2 mm. high.





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